

What is claimed is:

1. A sensor comprising an array of pixels organized in rows and columns and a plurality of metal busses overlaying the array of pixels, wherein:

a first column of pixels includes a proximal set of first pixels and a distal set of first pixels separated by a first jog region;

a second column of pixels includes a proximal set of second pixels and a distal set of second pixels separated by a second jog region;

the first jog region is displaced in a column direction and in a lateral direction transverse to the column direction from the second jog region; and

a first metal bus is insulatively disposed over both the first and second jog regions.

2. The sensor of claim 1, wherein:

the proximal set of first pixels is disposed along a first proximal line parallel to the column direction;

the distal set of first pixels is disposed along a first distal line parallel to the column direction;

the first proximal and distal lines are displaced by a fraction of a pixel pitch in the lateral direction;

the proximal set of second pixels is disposed along a second proximal line parallel to the column direction;

the distal set of second pixels are disposed along a second distal line parallel to the column direction; and

the second proximal and distal lines are displaced by the fraction of the pixel pitch in the lateral direction.

3. The sensor of claim 2, wherein:

each pixel includes a first region of high quantum efficiency and a second region of low quantum efficiency;

a maximum extent of the first region of a first pixel in the proximal set of first pixels defines a first reference extent;

a maximum extent of the second region of a first pixel in the proximal set of first pixels defines a first displaced extent;

a sum of the first reference extent and the first displaced extent is substantially equal to one pixel pitch.

4. The sensor of claim 3, wherein:

a maximum extent of the first region of a first pixel in the distal set of first pixels defines a second reference extent;

the second reference extent projects in the column direction to substantially overlap the first displaced extent.

5. The sensor of claim 2, wherein:

each pixel includes a first region of high quantum efficiency and a second region of low quantum efficiency;

a maximum extent of the first region of a first pixel in the distal set of first pixels defines a first reference extent;

a maximum extent of the second region of a first pixel in the proximal set of first pixels defines a first displaced extent; and

the first reference extent projects in the column direction to substantially overlap the first displaced extent.

6. The sensor of claim 1, wherein:

each pixel includes a first region of high quantum efficiency and a second region of low quantum efficiency;

the first region constitutes one of a photodiode and a pinned photodiode; and

the second region constitutes a photo gate.

7. The sensor of claim 1, wherein:

each pixel of the first column includes a first region of high quantum efficiency and a second region of low quantum efficiency;

the second region of each pixel of the first column includes a respective channel segment;

the channel segments of all pixels of the first column are linked end to end to form a first channel;

the first regions of each pixel of the proximal set of first pixels are disposed on one side of the first channel; and

the first regions of each pixel of the distal set of first pixels are disposed on another side of the first channel.

8. The sensor of claim 1, further comprising a plurality of additional columns of pixels, wherein:

each addition column of pixels includes a corresponding jog region;

the first metal bus is further insulatively disposed over the corresponding jog regions of the plurality of additional columns of pixels.

9. The sensor of claim 8, wherein the first metal bus is disposed at a first predetermined angle with respect to the column direction.

10. The sensor of claim 9, wherein the first predetermined angle is substantially 45 degrees.

11. The sensor of claim 8, wherein the first jog region, the second jog region and the corresponding jog regions of the plurality of additional columns of pixels align in a line disposed at a second predetermined angle with respect to the column direction.

12. The sensor of claim 11, wherein the second predetermined angle is substantially 45 degrees.

13. A method comprising steps of:
positioning jog regions in columns of an array of reticulated gate TDI CCD pixels so that the jog regions in adjacent columns are offset horizontally and vertically;
positioning metal busses over the array so that the metal busses are disposed diagonally and overlay the jog regions; and
positioning the metal busses to repeat with one metal bus every N pixels horizontally and vertically where N is a predetermined integer.

14. The method of claim 13, further comprising a step of positioning jog regions in the array to be offset horizontally and vertically within one pixel pitch from each other.

15. The method of claim 13, further comprising a step of disposing the jog regions along a diagonal across the array at a first angle.

16. The method of claim 13, further comprising steps of:
orienting the metal busses along a diagonal across the array at a first angle;
and
disposing the jog regions along a diagonal across the array at the first angle.

17. The method of claim 13, wherein the array uses spatial offsets to average out imaging aperture functions.

18. The method of claim 17, wherein the spatial offsets are one of step functions and smooth functions.

19. A sensor comprising an array of pixels organized in rows and columns and a plurality of metal busses overlaying the array of pixels, wherein:
a first column of pixels includes a proximal set of first pixels and a distal set of first pixels separated by a first jog region;